Nevada Site Specific Advisory Board (NSSAB)

Full Board Virtual Meeting

4:00 p.m. – July 15, 2020

Members Present:	Frank Bonesteel (Chair), William DeWitt, Karen Eastman, Charles Fullen, Dick Gardner (Vice-Chair), Anthony Graham, Tanya Henderson, Donald Neill, Steve Rosenbaum, Janice Six, Richard Stephans, Dina Williamson-Erdag
Members Absent:	Amina Anderson, Pennie Edmond, Richard Twiddy
Liaisons Present:	Phil Klevorick (Clark County), Richard Arnold (Consolidated Group of Tribes and Organizations [CGTO]), Delon Winsor (Esmeralda County Commission), Darrell Lacy (Nye County Nuclear Waste Repository Project Office [NWRPO]), Chris Andres and Justin Costa Rica (State of Nevada Division of Environmental Protection [NDEP]), Richard Friese, U.S. National Park Service (NPS)
Liaisons Absent:	Jared Brackenbury (Lincoln County Commission), Leo Blundo (Nye County Commission), Scott Lewis (Nye County Emergency Management [NCEM])
Department of Energy (DOE):	**Environmental Management (EM) Nevada Program**: Robert Boehlecke, Kevin Cabble, Kelly Snyder (Deputy Designated Federal Officer [DDFO]), and Bill Wilborn; **National Nuclear Security Administration/Nevada Field Office (NNSA/NFO**): Scott Wade
Government Contractors:	**Navarro**: Marilew Bartling, Michelle French, Christy Morris, Patty Neese, Ari Rosenberg, Jesse Sleezer, and Barbara Ulmer; **Desert Research Institute (DRI):** Susan Edwards and Maureen King; **Mission Support and Test Services, Inc. (MSTS):** Patty Hardesty
Public:	Gail Alexander, Bill Dolan, Gary Elgort, Mark Hilton, Ronald Korner, Dan Peterson, Kelsey Shank (theEdge), and Favil West

Open Meeting/Chair's Opening Remarks

Chair Frank Bonesteel welcomed everyone to the meeting. Vice-Chair Dick Gardner made a motion to accept the agenda. The motion was seconded and passed unanimously.

U.S. DOE Update (*Robert Boehlecke, DOE*)

Mr. Robert Boehlecke opened with a status of EM Nevada Program mission activities. In early June 2020, the Program was approved to operate in Phase 2 of its Operations Remobilization Plan with a deliberate and gradual approach to the execution of Phase 2 protocols. Monitoring data reported by the State of Nevada, the Southern Nevada Health District, and other public health agencies are being closely monitored with employee health and safety as the top priority. The Remobilization Plan aligns with the President's *Reopening America Again* and DOE's *Return to the Federal Workplace Framework* plans in full coordination with site partners at NNSA/NFO.

Mr. Boehlecke continued with the rationale and decision to conduct all public meetings virtually through the end of September 2020, including the September NSSAB Full Board meeting. This decision was made primarily to ease in the planning and implementation of these meetings and events as it is much easier for staff to plan for a virtual meeting and switch to in-person than vice-versa. This approach is in alignment with EM Nevada Program's Operations Remobilization Plan to implement video-conferencing protocols to engage stakeholders on a regular basis.

Mr. Boehlecke announced that DDFO Kelly Snyder was selected for a 120-day detail to the EM Headquarters (HQ) Office of Intergovernmental and Stakeholder Programs to serve as the Acting Designated Federal Officer for EM's advisory board program. In her new role, DDFO Snyder added that she be responsible for providing program management for all eight EM local advisory boards, including NSSAB. She will also be responsible for the EM Advisory Board (EMAB) that provides recommendations directly to EM-1. DDFO Snyder will be teleworking from Nevada during the detail. Mr. Boehlecke continued that there will be no interim staffing changes with Mr. Bill Wilborn and himself jointly serving as DDFO for the NSSAB; Barbara Ulmer will continue as the main contact for day-to-day NSSAB matters; and Jesse Sleezer, Navarro Strategic Communications Manager, will be the contact for public affairs needs. Mr. Boehlecke thanked DDFO Snyder for her contributions to the Program and wished her well in her new challenge.

Mr. Boehlecke mentioned upcoming presentations/meetings/conferences (present – next NSSAB meeting):

- July 21 - provide an update on Program activities at the Nevada National Security Site (NNSS) during the Community Environmental Monitoring Program (CEMP) workshop (virtual)
- August 5 - host the quarterly Low-level Waste (LLW) Stakeholders Forum (virtual)
- September 23 - host the Intergovernmental Liaisons meeting and September NSSAB Full Board meeting that includes work plan development (virtual)

Mr. Boehlecke updated that DOE awarded the Environmental Program Services contract to Navarro on June 17, 2020. This contract will provide a variety of cleanup services at the NNSS, the Nevada Test and Training Range (NTTR), and Tonopah Test Range (TTR), including:

- Groundwater Characterization and Monitoring
- Radioactive Waste Acceptance Program (RWAP) management
- Soils and Industrial Sites close-out/post-closure monitoring
- Deactivation and Demolition
- Program Management Support

Mr. Boehlecke noted that on-site work at TTR has been delayed due to travel-related considerations. Remaining activities are to perform radiological surveys, decontaminate equipment, demolish fences (as necessary), and complete additional corrective actions required per survey results. This work is mission-critical and field workers could restart activities during Phase 2, although they are currently working at sites closer to the NNSS and will at some point return to complete the work on the TTR.

Regarding the Industrial Sites Activity, Mr. Boehlecke reported that a draft Corrective Action Decision Document/Corrective Action Plan (CADD/CAP) for Corrective Action Unit (CAU) 577, Area 5 Chromium Contaminated Waste Disposal Cells, was submitted to NDEP in September 2019. Comment resolution and work on the CADD/CAP continued through June 2020 with the final CADD/CAP to be submitted to NDEP in July 2020.

Mr. Boehlecke provided a status on the Supplemental Environmental Project (SEP) that was jointly signed by DOE and NDEP due to noncompliant waste accepted at the NNSS. The SEP final report is undergoing final management review and will be submitted to NDEP next week by the regulatory due date of July 23, 2020.

Mr. Boehlecke commented that progress continues for the transfer of long-term stewardship responsibility to DOE's Office of Legacy Management (LM) for 70 closed Federal Facility Agreement and Consent Order sites on the TTR and NTTR. A joint transfer Readiness Review with EM, LM, and NNSA is scheduled for next week. Tranfer is anticipated to be complete by September 30, 2020, although final surveys and records may be delayed until next fiscal year due to the pandemic.

Regarding the Underground Test Area (UGTA) Activity (groundwater), Mr. Boehlecke stated that the draft Closure Report for CAU 97, Yucca Flat/Climax Mine was submitted to NDEP for review in June 2020 with NDEP's review anticipated to be complete in August 2020. Groundwater sampling in Yucca Flat resumed in June 2020. During June 2020 at CAU 101/102, Pahute Mesa, internal comments on the Geochemistry Report were being addressed, the Hydrologic Data Document underwent internal review, and an update to the Corrective Action Investigation Plan was submitted to NDEP for review with NDEP's review anticipated to be complete this month.

Mr. Boehlecke commented that disposal operations at the Area 5 RWMC are regularly receiving waste shipments. Compared to pre-COVID volumes, Area 5 RWMC is receiving about one-third of the volume each week and current projections are for under 500,000 cubic feet total by fiscal year end, which is less than one-half the volume received in prior fiscal years. This will affect the amount of funding available to rural counties surrounding the NNSS in the Emergency Preparedness Working Group grant. Construction continues on the berm and channel in the southern portion western section. Completion will require relocation of a power line planned for later this summer. Construction was completed on a new LLW disposal cell.

Mr. Boehlecke updated on the Y-12 waste event from July 2019. RWAP will conduct a facility evaluation of critical program elements and verification of implementation of corrective actions in late September/October 2020 timeframe. Y-12 is required to perform an internal assessment prior to the RWAP facility evaluation. Y-12's Waste Certification Program is suspended and cannot ship waste to the NNSS until it satisfactorily undergoes a RWAP facility evaluation. Under its Solid Waste Permit, NNSA/NFO is in receipt of a Finding of Alleged Violation (FOAV) and Order issued by NDEP. The NNSA/NFO is working with the EM Nevada Program to respond within the time

frames established by NDEP. The U.S. Environmental Protection Agency (EPA) sent the NNSA/NFO a letter stemming from an inspection conducted by the EPA at the NNSS in August 2019. This letter indicates several potential violations under its Resource Conservation and Recovery Act Permit, including the Y-12 noncompliant waste. The NNSA/NFO worked with the EM Nevada Program and Y-12 to gather information to respond to the EPA.

Mr. Boehlecke reminded the Board that drafting an update continues for the NNSS Waste Acceptance Criteria (WAC). The last update of the NNSSWAC was completed in November 2016. The update is an effort to make the document more clear and efficient; there will not be significant changes in the types and amounts of waste received at the NNSS. The NSSAB will receive a briefing on the changes to the NNSSWAC at a future meeting.

Mr. Boehlecke updated on the *Draft Paducah Gaseous Diffusion Plant Environmental Assessment (EA) for Proposed Disposition of Waste and Materials*. Based on the final EA, DOE determined a Finding of No Significant Impact with the proposed action that does not constitute a "major federal action" under the National Environmental Policy Act and an environmental impact statement is not required.

Mr. Boehlecke commented on the *Final Supplemental Environmental Impact Statement for the Disposition of Depleted Uranium Oxide Conversion Product Generated from DOE's Inventory of Depleted Uranium Hexafluoride* (Final SEIS). Issued on June 5, 2020, the Record of Decision (ROD) announced DOE's preference to dispose of the material, if declared waste, at one or more of the following LLW locations: Energy*Solutions* (commercial site in Utah), Waste Control Specialists (commercial site in Texas), and the NNSS. DOE's near-term plan is to focus on depleted uranium oxide disposal at commercial sites, although the ROD does not prevent future disposal at the NNSS. The decision reinforces the Department's commitment to the safe and effective management and disposition of materials from its cleanup sites.

Mr. Boehlecke continued with a waste stream from Oak Ridge, TN named Isotek Building 2026 Hot Cell Process Waste (LLW). This waste profile is undergoing review by the NNSS Waste Acceptance Review Panel (WARP). The EM Nevada Program is working with the generator on reconciling comments on the profile and anticipates a recommendation from WARP in August 2020.

Mr. Boehlecke updated on the Paducah Classified Gaseous Diffusion Plant converters. One compressor shipment is to be completed prior to the end of September 2020. No converters will ship this fiscal year. The waste profile was modified to list only the compressor to be shipped, and the generator will resubmit the profile next fiscal year to reflect the converters with the anticipated shipping schedule.

Mr. Boehlecke concluded that four radioisotope thermoelectric generators (RTGs) containing U.S. origin material located in France require repatriation and disposition. These RTGs comply with the NNSSWAC and are similar to previously disposed at the NNSS. The waste profile has been conditionally approved until the generator submits a transportation plan for approval. The shipment of three of the four RTGS are planned for calendar year 2020, although the exact date is to be determined and travel restrictions may affect timing. The Waste Certification Official (WCO) resides in California and DOE is work on approving travel for the WCO to conduct final inspections in France. The shipment will be Highway Route Controlled Quantity that requires a transportation security plan, communications between carrier and transit states, and Commercial Vehicle Safety Alliance Level VI inspections in some states.

NNSA Update (*Scott Wade, NNSA/NFO)*

Mr. Scott Wade reported that NNSS facilities (U1a Complex, Device Assembly Facility, and others) are currently operational under full COVID-19 controls. This has created challenges that the NNSA/NFO and its contractor, MSTS, are working through.

Mr. Wade elaborated on the FOAV and Order issued by NDEP and the notice of violation received from the EPA. The response to the notice of violation has been completed and sent to the EPA, and the NNSA/NFO is awaiting feedback from EPA. The NNSA/NFO initiated a process with NDEP that allows both organizations to collegiately address the FOAV and Order. The NSSAB will receive updated information at future Full Board meetings.

Liaison Updates

Clark County (*Phil Klevorick*)
Liaison Phil Klevorick reported that in the last four months he has attended 405 virtual meetings that in the past many have been in-person. He noted that the National Transportation Stakeholders Forum conference was cancelled and replaced with webinars. Liaison Klevorick added that he has attended several follow-up meetings for the Energy Communities Alliance that have also gone virtual. As chair for the Economic Development Subcommittee for sites impacted by DOE, NNSA, and Nuclear Energy operations, he commented that these meetings have gone virtual. The Energy Facility Contractors Group, an intergovernmental organization with contractors and subcontractors across the DOE Complex, meeting will be held virtually in September 2020. Due to budget constraints, all county departments have been directed to cancel travel for 2020-2021, which will affect his participation in these meetings for the near future. Liaison Klevorick concluded that all municipalities in southern Nevada will be working a 4/10 work schedule (Monday – Thursday) along with a 4-6 percent wage reduction at least until July 2021.

CGTO (*Richard Arnold*)
Liaison Richard Arnold updated on the Tribal Revegetation Project at the Area 5 RWMC. Due to COVID-19, the Tribal Revegetation Committee was not able to monitor the test plots in April or May 2020, although tribal members have been receiving progress reports. In order to minimize the number of people at the site, Liaison Arnold and a DRI representative were approved to conduct monthly monitoring activities to evaluate the plants and the growth through September 2020. They have observed favorable results, and a report on the progress will be released in September 2020. Liaison Arnold noted that the State and Tribal Governments Working Group is meeting virtually to share information with EM on national, regional, and local levels. The CGTO has participated in discussions with EM HQ staff regarding its Strategic Vision. The CGTO has also been involved with discussions regarding LM activities across the DOE complex, including TTR sites. Liaison Arnold concluded that the Tribal Radioactive Materials Transportation Committee, along with the Nuclear Energy Tribal Working Group, are engaged in conversations with DOE in order for the tribal voice be heard and to receive updates.

NWRPO (*Darrell Lacy*)
Liaison Darrell Lacy informed the NSSAB that Nye County personnel returned to work at their offices for over a month. County offices have limited public access by appointment or need-basis only. Liaison Lacy noted that Nye County had a recent uptick of COVID-19 cases at the county jail due mainly to U.S. Immigration and Customs Enforcement detainees.

NDEP (*Christine Andres)*
Liaison Christine Andres updated that employees for the State of Nevada Department of Conservation and National Resources continue to work mostly from home and its offices are open to the public by appointment only. She noted that NDEP's move to a new location for its Las Vegas office was completed safely in July 2020. She reiterated from the last meeting that NDEP continues to work during the pandemic, which is a testament to the EM Nevada Program staff as they continue to work on a number of items mentioned by Mr. Boehlecke in his DOE update. Liaison Andres concluded that the DOE Intergovernmental Meeting would be holding its annual meeting virtually in November 2020.

Waste Verification Strategy Updates – Work Plan #1 (*Robert Boehlecke, DOE)*

- **NSSAB Work Plan Item #1**
  - Provide a recommendation, from a community perspective, on the potential verification strategies identified and/or how these strategies may be implemented
  - NSSAB recommendation is due tonight
- **Review: Verification Purpose**
  - Verification is the monitoring of the NNSSWAC compliance
  - NNSSWAC provides the criteria to ensure protection of workers and the public
    - Prescribes regulatory, health and safety, technical, and administrative requirements for programmatic, container, and profile certification
    - Generator programs and profiles are reviewed by RWAP for NNSSWAC compliance
    - Generators are required to certify that the wastes submitted to NNSS are compliant with the NNSSWAC
- **Review: Verification Objectives**
  - Assess generator programs to determine that:
    - Radionuclides present are correctly identified with the correct concentrations for proper radioactive categorization
    - Chemical constituents are sufficiently evaluated so that waste is correctly categorized as LLW or MLLW
    - Other hazards, such as, polychlorinated biphenyls or asbestos are correctly identified
    - No prohibited items are present
    - Waste conforms to the waste profile as approved

- **Review: Programmatic Verification**

Methodology	Primary Use	Current NNSS Capability	Effectiveness/ Limitations	Costs*	Other Factors
Facility Evaluation Program	Evaluation of programmatic systems used by the waste generator	RWAP maintains staff to conduct facility evaluations in core areas	Identifies issues prior to shipment and receipt Programmatic function - limited review of individual containers	Capital expenditures **minimal** Operational costs **moderate**	Funded by DOE EM Nevada Program
Independent Waste Certification Program	Evaluation of programmatic systems and review of each individual waste package	NNSS requires each waste generator to have an Independent WCO and requisite resources	Provides for review of each individual container as well as programmatic elements	Capital expenditures **none** Operational costs **minimal**	Ownership and cost assumed by the generator
Defined Profile Submission and Review Program	Provides detailed technical basis for the characterization and categorization of each waste stream	WARP chartered to review all profiles	Programmatic function - no review of individual containers	Capital expenditures **minimal** Operational costs **moderate**	Reviews funded by DOE EM Nevada Program
*Capital Costs: "high" is more than $10 million, "moderate" ranges from $1 million to $10 million, and "minimal" is less than $1 million Operational Costs: "high" is more than 10 full-time equivalent employees (FTE), "moderate" is 2 to 10 FTE, and "minimal" is less than or equal to one (1) FTE					

- **Review: Container Verification**

Methodology	Primary Use	Current NNSS Capability	Safety Considerations	Effectiveness/ Limitations	Costs*
Visual Verification	Detect prohibited items; evaluate void space; confirm profile description	None, currently performed at generator by RWAP staff	Opening waste containers has inherent risks; requires appropriate engineering and administrative controls and personnel protective equipment	No chemical or radiological information	Capital expenditures **moderate** Operational costs **moderate**
Real-Time Radiography (RTR)	Detect prohibited items; evaluate void space; confirm profile description	Full capabilities to perform RTR on drums and boxes	Minimal with standard controls	Visuals may be indeterminate due to the resolution limitations; No chemical or radiological information	Capital expenditures **minimal** Operational costs **minimal**
Fingerprinting via Analytical Sampling	Confirming chemical and or radiological categorization of waste	None, NNSSWAC allows for splits to be collected at generator site	Same as Visual Verification when performed at NNSS	Chemical and radiological information obtained; Effective for particulates; Limited effectiveness for debris	Capital expenditures **moderate** Operational costs **moderate**
Radiological Scanning	Radiological data indicator	Full capability	Minimal with standard controls	Gross indications on radiological activity or contamination	Capital expenditures **minimal** Operational costs **moderate**
Non-Destructive Assay	Radiological data confirmation	None	Minimal with standard controls	To be effective must be calibrated to expected radionuclides	Capital expenditures **moderate to high** Operational costs **moderate**
*Capital Costs: "high" is more than $10 million, "moderate" ranges from $1 million to $10 million, and "minimal" is less than $1 million Operational Costs: "high" is more than 10 FTE, "moderate" is 2 to 10 FTE, and "minimal" is less than or equal to one (1) FTE					

- **Updates Since January**
  - DOE reviews completed since January included verification strategies as a focus
  - Feedback from the reviews is being used to strengthen the established verification tools, particularly:
    - Visual verifications
    - RTR
    - Analytical sampling
  - Since March, aligned resources to the waste generator's status of operations
    - Remote evaluations are being utilized for program reviews
  - The resumption of priority EM Nevada Program travel has been authorized as of July 6; primarily RWAP onsite visual verifications and targeted assessments
  - Onsite verifications have been identified as an area for enhancement and will be a top priority moving forward
  - NSSAB Path Forward
    - Provide a recommendation, from a community perspective, on the potential verification strategies identified and/or how these strategies may be implemented
    - NSSAB recommendation is due tonight
- **Questions**

In response to a Board question, the following clarification was provided:

- During on-site facility evaluations at generator sites, RWAP focuses on verifications of larger containers for prohibitive items. When considering different verification methods, the EM Nevada Program weighs each option for the risks eliminated versus the resources required for implementation; therefore, the ultimate outcome is to determine the appropriate balance of verification tools to reduce risk within the current resources available.

Chair Bonesteel lead a group discussion to address any further thoughts, concerns, comments, suggestions, or questions related to the work plan item. After Board dialogue, the following suggestions were discussed:

- Member William DeWitt proposed that the EM Nevada Program move ahead with the waste verification strategy recommendations in the Navarro report.
- Member Richard Stephans proposed that the EM Nevada Program review and clarify the language in the NNSSWAC in Section 2.2 and 2.1.5 to require (rather than encouraging) the reporting of "near-miss" events, along with the applicable investigative and corrective actions.
- Member Stephans proposed that enhanced lines of inquiry be established, reviewed, and used, as appropriate (reference Navarro's recommendations from January work plan briefing).
- Member Dina Williamson-Erdag proposed that the EM Nevada Program expand the RTR capability on the NNSS (enlarge, additional staff, etc.). Member Steve Rosenbaum added to her proposal to expand the RTR capability with a container-size portal.

Member Karen Eastman made a motion to include the preceding items in the recommendation letter to DOE. The motion was seconded and passed unanimously.

Written Public Comment Read into Record

There was no written public comment.

Other NSSAB Business (*Frank Bonesteel, Chair*)

Chair Bonesteel announced that elections will be held for the NSSAB Chair and Vice-Chair positions at the September 23, 2020 Full Board meeting. A list outlining the responsibilities for both positions was provided to the Board. Members were encouraged to consider running for a leadership position. Interested members are asked to notify the NSSAB Office no later than August 31, 2020.

Facilitator Barbara Ulmer reminded the Board that the March 18, 2020 Full Board meeting was cancelled due to COVID-19; so DOE was not able to brief the NSSAB on the FY 2022 Baseline Prioritization - work plan item #2. The EM Nevada Program budget was due and submitted to EM HQ in March 2020. At the May 2020 NSSAB meeting, Mr. Boehlecke announced that the baseline prioritization item was removed from the work plan, but the NSSAB could choose to consider at a future meeting. Facilitator Ulmer continued that a member expressed interest in this work plan item recently, and Chair Bonesteel asked that it be added to the agenda for the September 23, 2020 Full Board meeting. Chair Bonesteel polled the NSSAB for input on how extensive the Board would like the briefing, as it will be given during a virtual meeting. Member Stephans requested that the briefing be as succinct as possible. Member Anthony Graham expressed interest in providing a formal recommendation. Facilitator Ulmer added that Navarro is researching a method of online voting and tallying of the individual rankings for the work plan.

Facilitator Ulmer announced that the NSSAB Long-term Strategy - work plan item #4 is being carried over into next fiscal year, as the work plan item is not time sensitive. Additionally, DDFO Snyder is starting her detail to HQ and not available to brief on the topic until next fiscal year.

Engine Maintenance, Assembly, and Disassembly (EMAD) Path Forward ~ Work Plan #6 – Kevin Cabble, DOE

- **NSSAB Work Plan Item #6**
  - From a community perspective, the NSSAB will provide a recommendation on the Department's planned end state for EMAD or how the plan could be improved
  - NSSAB recommendation is due no later than September 2020
- **Past EMAD Recommendations**
  - NSSAB reviewed closure options in December 2009 with the following recommendations:
    - Finding no feasible alternatives, NSSAB recommended EMAD be demolished to slab
      - Lack of interest, logistical challenges of accessibility, and continuing maintenance costs did not support a museum conversion
    - Given historical value, NSSAB recommended that EM continue to explore any possible reuse inquiries/options between now and demolition
      - Costs for retrofitting have eliminated the feasibility of other entities reusing the facility
- **Outline**
  - Nuclear Rocket Development Stations (NRDS) History
  - Test Cell C (TCC) Background
  - EMAD History
  - Completed Activities at EMAD
  - Current Conditions at EMAD
  - Planned Closure Activities
  - Cultural Resource Documentation

- **NRDS History**
  - NRDS mission supported Project Rover by developing and testing nuclear rocket engines
  - Objective was to use atomic energy to propel a rocket for interplanetary travel and other terrestrial objectives
  - NRDS activities began in 1957 and ended in 1973
  - Jointly administered by the Atomic Energy Commission and the National Aeronautics and Space Administration
  - Visited by President John F. Kennedy (only U.S. President to visit the NNSS)
  - NRDS Activities conducted in Area 25 of the NNSS
    - NNSS chosen due to the history of nuclear testing and the potential to release radioactive exhaust
  - NRDS facilities included:
    - Test Cell A (closed)
      - Test Cell C (partially closed)
      - Engine Test Stand-1 (currently active)
      - Reactor Maintenance, Assembly, and Disassembly (RMAD) (closed)
      - Jackass and Western Railroad (closed)
      - EMAD (scheduled for closure)
- **TCC Background**
  - Built in 1961, TCC was used to ground test nuclear reactors and engines for rockets
    - An upgrade from the earlier Test Cell A
    - Connected at that time by rail to the rest of the NRDS:
      - Test Cell A
      - Engine Test Stand-1
      - RMAD
      - EMAD
  - Operations ceased in 1973 with the cancellation of Project Rover
  - TCC has no current or future mission
  - Scheduled for demolition and disposal starting in FY 2023 and planned for completion by FY 2024
  - Remove and demolish structures and properly dispose of the generated waste
  - Demolition at TCC reduces the long-term cost of surveillance and maintenance
  - End state is anticipated to be demolition to slab of remaining facilities
  - NSSAB recommended in November 2019 that the Department accept the plan for the TCC end state
- **EMAD History**
  - Fully completed in 1968, EMAD was used to stage, assemble, and disassemble engines for rockets
    - Constructed at a cost of more than $50 million
    - Largest “hot cell” in the world
    - Eight stories high with 100,000 square feet of floor space
    - Six-foot thick walls and 32-inch thick roof
  - Operations ceased in 1973 with the cancellation of Project Rover
  - After Project Rover was cancelled, EMAD was used for various projects:
    - Late 1970s and early 1980s: Spent nuclear fuel handling and packaging demonstration project
    - Mid-1980s: EMAD considered for another project to develop a space nuclear power system that was never executed
    - Late 1990s: Fluid Tech, Inc. activities

- **Completed Activities at EMAD**
  - EMAD addressed under CAU 114 in the FFACO and consists of two Corrective Action Sites (CASs):
    - CAS 25-41-03, EMAD Facility including water tower
    - CAS 25-99-23, Manned Control Car and Engine Installation Vehicle
  - Streamlined Approach for Environmental Restoration (SAFER) Plan was approved by NDEP in 2009 and revised in 2010
  - Another revision to the SAFER is necessary and will be prepared
- **EMAD Current Condition**
  - Since the 2009 NSSAB briefing, conditions at EMAD have changed:
    - Liquids have been drained from pipes and fixtures throughout
    - Floor tiles contain asbestos; some have been removed
    - Concrete west wall patched where breached by equipment
    - Flash flood in October 2015 flooded the basement and first floor with water and sediment
    - Cooling tower on top in danger of collapsing
    - Roofs have decayed and leak
- **Planned Closure Activities**
  - EMAD has no current or future mission
  - Scheduled for demolition and disposal starting in FY 2025 and planned for completion by FY 2027
  - Remove and demolish structures and properly dispose of the generated waste at the NNSS
  - Demolition at EMAD reduces the long-term cost of surveillance and maintenance
  - End state is anticipated to be demolition to slab of remaining facilities

Cultural Resource Documentation for EMAD – Maureen King and Susan Edwards, DRI

- **Cultural Resource Documentation**
  - EMAD determined eligible to the National Register of Historic Places (NRHP) in 1996
  - National Historic Preservation Act requires federal agencies to consider effects of federally-funded projects on historic properties through the Section 106 process
  - Agencies must also provide opportunity for comment regarding avoiding or mitigating adverse effects to affected historic properties
    - A historic property is any property that is included in or eligible for inclusion in the NRHP
    - An adverse effect occurs when a project may diminish the integrity of a historic property
  - If a historic property will be adversely affected, mitigation may be required, which can include:
    - Data recovery to preserve knowledge about the property
    - Preserving components of the property, if possible
    - Mitigation banking by preserving another historic property in lieu of the area of potential effect
  - Initial cultural resource documentation conducted in 1996, prior to removal of manipulators
  - Since then, nearly all interior furnishings and tools removed
    - Removed items were reused, disposed as radioactive waste, or disposed as construction waste
    - Some items donated to the National Atomic Testing Museum
    - Two locomotives donated to the Nevada Southern Railroad Museum in Boulder City, NV

- In 2019, DRI archeologists completed additional cultural resource surveys and documentation including a current condition assessment
  - Based on DRI's recommendation, DOE NNSA determined EMAD retains its NRHP eligibility
    - Nevada State Historic Preservation Office (SHPO) concurred with NNSA eligibility determination
  - Any adverse effects due to the closure activities will require mitigation agreed to by SHPO, NNSA, and DOE
  - A Memorandum of Agreement, to include the mitigation measures to be performed, will be negotiated between SHPO, NNSA, and EM and is currently under review
- The report on the results of the 2019 EMAD current condition historic documentation effort is available through the DOE Office of Scientific and Technical Information (OSTI) using the link:
  - https://www.osti.gov/biblio/1576570-revised-architectural-survey-nuclear-engine-maintenance-assembly-disassembly-facility-area-nevada-national-security-site-nye-county-nevada
- The 1996 Historic American Engineering Record (HAER) EMAD documentation is available through the Library of Congress using the link:
  - https://cdn.loc.gov/master/pnp/habshaer/nv/nv0200/nv0207/data/nv0207data.pdf

- **Review**
  - NRDS History
  - TCC Background
  - EMAD History
  - Completed Activities at EMAD
  - Current Conditions at EMAD
  - Planned Closure Activities
  - Cultural Resource Documentation
- **Path Forward**
  - From a community perspective, the NSSAB will provide a recommendation on the Department's planned end state for EMAD or how the plan could be improved
  - NSSAB recommendation is due no later than September 2020
- **Questions**

In response to Board questions, the following clarifications were provided:

- The EMAD's entire roof, including the hot bay, leaks and has flooded the basement and the first floor. The roof was repaired about ten years ago, although it has since deteriorated, resulting in substantial maintenance costs.
- Cultural resource documentation from 1996 is available at the Library of Congress or online. Cultural resource documentation from 2019 is also available online and maintained at the Nuclear Testing Archive.
- DRI's responsibility includes conducting the Section 106 process for EMAD and in consultation with SHPO to document the problems with abandonment in place. SHPO recognizes that EMAD has been reviewed for end-state demolition. SHPO will work with DOE and NNSA on any mitigation measures prior to closure activities.
- Most of the hazardous components have been removed from the facility. EMAD currently contains asbestos tiles and radiological constituents that require remediation before demolition. EMAD is not required to be demolished to slab, although the cooling tower on the roof is at risk of collapsing and any flooding events creates hazards for workers and maintenance costs. The EMAD facility is not available for tours due to Hantavirus risk.

EMAD was considered for another mission, although the costs for refurbishing (new walls, plumbing, electrical) made reuse of the facility not feasible.

- Due to budget priorities, EMAD has been on the EM schedule for demolition and disposal for a number of years. Other NNSS facilities were demolished using additional funding provided in the American Recovery and Reinvestment Act of 2009. Estimated cost of EMAD demolition and disposal is $38 million.
- Once EMAD is taken down to slab, any subsurface piping will be grouted. There will be no surface contamination remaining, resulting in no further risk to workers or the environment.

Chair Bonesteel lead a group discussion to address any further thoughts, concerns, comments, suggestions, or questions related to the work plan item. Member Tanya Henderson suggested that EMAD be demolished to slab as planned. Member Stephans concurred that EMAD be demolished to slab as planned and the EM Nevada Program coordinate with the National Atomic Testing Museum to support a separate EMAD exhibit of its history and environmental restoration efforts. Member Williamson-Erdag suggested that the locomotive engine be moved to Mercury, NV and placed near the visitor center or along the highway with an exhibit. Member Graham made a motion that recommendation development be tabled until the September meeting in order for him to further consider and research. The motion was seconded and passed with a majority.

Meeting Wrap-Up and Adjournment

Upcoming calendar of events:

- CEMP virtual workshop – July 20-21, 2020
- LLW Stakeholders Forum virtual meeting (invite only) – August 5, 2020
- NSSAB Intergovernmental Liaisons virtual meeting – September 23, 2020 at 3 p.m.
- NSSAB Full Board virtual meeting – September 23, 2020 at 4 p.m.
- NSSAB Orientation in Las Vegas, NV – October 14, 2020
- NSSAB Work Plan Tour at the NNSS (full day) – October 27, 2020

Any questions on the calendar of events, please contact the NSSAB Office at 702-523-0894.

Member Stephans made a motion to adjourn the meeting. The motion was seconded and passed unanimously. The meeting was adjourned at 7:08 p.m.